

**UTAH CERTIFIED LABORATORIES APPROVED FOR UST ENVIRONMENTAL SAMPLE
ANALYSIS FOR AROMATIC VOLATILES AND OIL & GREASE**

All approvals limited to methods listed on current certification from the State of Utah

REVISED November 20, 2002

American West Analytical
463 West 3600 South
Salt Lake City, UT 84115
(801) 263-8686
(methods 1,3,4,5)

Applied Physics and Chemistry
Laboratory
13760 Magnolia Ave
Chino, CA 91710
(909) 590-1828
(method 4)

Columbia Analytical
Services-WA
1317 South 13th Avenue
Kelso, WA 98626
(206) 577-7222
(methods 2,3)

DataChem Laboratories Inc.
960 West LeVoy Drive
Salt Lake City, UT 84123
(801) 266-7700
(method 3)

Environmental Science Corp.
12065 Lebanon Road
Mt. Juliet, TN 37122-2065
(615) 758-5858
(methods 1,2,3,4)

Enviropro Laboratories
2712 South 3600 West Suite E
West Valley City, UT 84119
(801) 964-2511
(methods 1,2,3,4)

Flowers Chemical Laboratories,
Inc.
481Newburyport Avenue
Altamonte Springs, FL 32715-
0597
(407) 339-5984
(methods 1,2,3)

2425 New Holland Pike
PO Box 12425
Lancaster, PA 17601-2425
(717) 656-2300
(methods 1,2,3,4)

Lionville Labs-PA
208 Welsh Pool Road
Lionville, PA 19341-1333
(610) 280-3000
(method 2,3)

Mountain States Analytical
1645 West 2200 South
Salt Lake City, UT 84119
(801) 973-0050
(methods 1,3,4,5)

Severn Trent Laboratories-Denver
4955 Yarrow Street
Arvada, CO 80002
(303) 421-6611
(methods 1,2,3,4)

Severn Trent Laboratories-Chicago
2417 Bond Street
University Park, IL 60466-3182
(708) 534-5200
(methods 1,2,3,4)

Severn Trent Laboratories-Houston
6310 Rothway
Houston, TX 77040
(713) 690-4444
(methods 1,2,3,4)

SPL (Southern Petroleum
Laboratories-Scott)
500 Ambassador Caffery Parkway
Scott, LA 70583-8544
(318) 237-4775
(method 1,2,3,4)

8880 Interchange Drive
Houston, TX 77054
(713) 660-0901
(methods 1,2,3,4)

Thiokol Environmental
Laboratory
9160 North Highway 83
Brigham City, UT 84302
(435) 863-2437
(methods 1,2,3,4)

Utility Testing Laboratory
40 West Louise Avenue
Salt Lake City, UT 84115
(801) 485-8941
(methods 1,2,4)

KEY

*Current methods for which the
laboratory is certified:*

*1. 8015b; 2. 8021b; 3. 8260b;
4. 1664; 5. Utah TPH
Fractionation Method*

*Note: Laboratory certification
status for the methods listed are
subject to change without notice.
Please ensure that the selected
laboratory can meet your
required analytical needs prior
to your sampling event. Call the
Division of Environmental
Response and Remediation if you
have sampling questions.*

Lancaster Laboratories Inc.

SPL (Southern Petroleum
Laboratories-Houston)

8015 B	8021 B	8260 B	1664	BTEXN/MTBE	TPH as GRO	TPH as DRO	O&G or TRPH	Solvents
AWAL	Columbia	AWAL	AWAL		8015 B	8015 B	1664	
Environmental Science	Environmental Science	Columbia	Applied Physics	8021 B				8021 B
Enviropro Labs	Enviropro Labs	Datachem	Environmental Sci	8260 B	8260 B			8260 B
Flowers Chemical Lab	Flowers Chemical Lab	Environmental Science	Enviropro Labs					
Lancaster Laboratories	Lancaster Laboratories	Enviropro Labs	Lancaster Laboratories Inc					
Mountain States	Lionville Labs - PA	Flowers Chemical Labs	Mountain States					
Severn Trent-Denver	Severn Trent-Denver	Lancaster Laboratories	Severn Trent-Denver					
Severn Trent-Chicago	Severn Trent-Chicago	Lionville Labs-PA	Severn Trent-Chicago					
Severn Trent-Houston	Severn Trent-Houston	Mountain States	Severn Trent-Houston					
SPL-Scott	SPL-Scott	Severn Trent-Denver	SPL-Scott					
SPL-Houston	SPL-Houston	Severn Trent-Chicago	SPL-Houston					
Utility Testing	Utility Testing	Severn Trent-Houston	Utility Testing					
		SPL-Scott						
		SPL-Houston						
Laboratory*	TPH as GRO	TPH as DRO	BTEXN/MTBE	O&G or TRPH	Solvents			
American West	X	X	X	X	X			
Applied Physics				X				
Columbia Analytical	X		X		X			
Datachem Labs	X		X		X			
Environmental Science	X	X	X	X	X			
Enviropro Labs	X	X	X	X	X			
Flowers Chemical Lab	X	X	X		X			
Lancaster Laboratories	X	X	X	X	X			
Lionville	X		X		X			
Mountain States	X	X	X	X	X			
Severn Trent-Denver	X	X	X	X	X			
Severn Trent-Chicago	X	X	X	X	X			
Severn Trent-Houston	X	X	X	X	X			
SPL-Scott	X	X	X	X	X			
SPL-Houston	X	X	X	X	X			
Utility Testing	X	X	X	X	X			

Laboratory*	Gasoline	Diesel	Used Oil	New Oil	Unknown			
American West	X	X	X	X	X			
Applied Physics				X				
Columbia Analytical	X				X			
Datachem Labs	X				X			
Environmental Science	X	X	X	X	X			
Enviropro Labs	X	X	X	X	X			
Lancaster Laboratories	X	X	X	X	X			
Flowers Chemical Lab	X		X	X	X			
Lionville Labs-PA	X				X			
Mountain States	X	X	X	X	X			
Severn Trent-Denver	X	X	X	X	X			
Severn Trent-Chicago	X	X	X	X	X			
Severn Trent-Houston	X	X	X	X	X			
SPL-Scott	X	X	X	X	X			
SPL-Houston	X	X	X	X	X			
Utility Testing	X	X	X	X	X			
* This list is subject to change without notice.								
It is the users responsibility to ensure that the laboratory used is certified for the methods required by the Executive Secretary (UST).								

Utah LUST Program Cleanup Levels¹

July 11, 2000

RISK-BASED CORRECTIVE ACTION (RBCA) TIER 1 SCREENING LEVELS (SLs) <i>These levels only apply when there are no buildings, property lines or utility lines within 30 feet of source, and no water wells or surface water within 500 feet of source area.</i>			RECOMMENDED CLEANUP LEVELS (RCLs) FOR SOIL and GROUNDWATER, and MAXIMUM CONTAMINANT LEVELS (MCLs) FOR GROUNDWATER <i>These levels apply when RBCA Tier 1 criteria are exceeded; i.e., if there are buildings, property lines or utility lines within 30 feet of source, or water wells or surface water within 500 feet of source area, or if the Tier 1 screening levels are exceeded.</i>	
CONSTITUENT	Tier 1 SL Groundwater (mg/L)	Tier 1 SL Soil (mg/kg)	RCL/MCL Groundwater (mg/L)	RCL Soil (mg/kg)
Benzene	0.3	0.9	0.005	0.2
Toluene	7	61	1.0	100
Ethylbenzene	4	23	0.700	70
Xylenes	73	235	10.0	1000
Naphthalene	0.1	10	0.020 ²	2
Methyl t-butyl ether (MTBE)	0.2	0.3	0.07 ²	not available; use Tier 1 SL
TPH-gasoline	10	1500	0.500 ³	30
TPH-diesel	10	5000	0.500 ³	100
Oil and Grease (TRPH)	10	10000	10.0 ²	300
Lead	not available; use MCL	not available; use RCL	0.015	100

¹ = Any laboratory analytical method detection limit used should be below the applicable cleanup level to the extent practical pursuant to UAC R311-205.

² = Not an MCL ³ = Not an MCL or RCL. Other applicable standard pursuant to R311-211 Cleanup Standards Policy

Table of Analytical Methods for Sampling (March 31, 1999)

Substance or Product Type	Contaminant Compounds to be Analyzed	ANALYTICAL METHODS
		Soil, Groundwater or Surface Water
Gasoline	Total Petroleum Hydrocarbons (TPH); <u>and</u> Benzene, Toluene, Ethyl benzene, Xylenes, Naphthalene, (BTEXN) and MTBE	EPA 8015B ¹ <u>and</u> EPA 8021B ¹ or 8260B
Diesel	Total Petroleum Hydrocarbons (TPH); <u>and</u> Benzene, Toluene, Ethyl benzene, Xylenes, and Naphthalene (BTEXN)	EPA 8015B <u>and</u> EPA 8021B or 8260B
Used Oil	Oil and Grease (O&G) or Total Recoverable Petroleum Hydrocarbons (TRPH); <u>and</u> for Benzene, Toluene, Ethyl-benzene, Xylenes, Naphthalene (BTEXN) & MTBE; <u>and</u> Halogenated Volatile Organic Compounds (VOC's)	EPA 1664 or 5520 ² <u>and</u> EPA 8021B or 8260B
New Oil	Oil and Grease (O&G) or Total Recoverable Petroleum Hydrocarbons (TRPH)	EPA 1664 or 5520
Other or Unknown	Total Petroleum Hydrocarbons (TPH); <u>and</u> Benzene, Toluene, Ethyl benzene, Xylenes, and Naphthalene (BTEXN); <u>and</u> Halogenated Volatile Organic Compounds (VOC's)	EPA 8015B <u>and</u> EPA 8021B or 8260B

¹

The following modifications to these certified methods are considered acceptable by the Executive Secretary (UST):

- A. Dual column confirmation may not be required for TPH & BTEXN/MTBE analysis.
- B. A micro-extraction or scale-down technique may be used for aqueous samples.
- C. Hexane may be used as an extraction solvent.

NOTE: The sample preparation method and any modification(s) to a certified method must be reported by the laboratory on the final analytical report.

² Methods or test procedures allowed for Oil and Grease (O&G) or Total Recoverable Petroleum Hydrocarbons (TRPH) are 5520(b) or 5520(f) respectively.

CLARIFICATION ON NEW ANALYTICAL REQUIREMENTS:

- 1) Sample preparation and analyses for BTEXN and MTBE must always be purged and not extracted. The acceptable purge methods are either 8021B or 8260B.
- 2) TPH analysis for gasoline range organics (GRO) must always use a purge and trap method. The results must now be reported as TPH as GRO $C_6 - C_{10}$.
- 3) TPH analysis for diesel range organics (DRO) must always use an extraction method. The results must now be reported as TPH as DRO $C_{10} - C_{28}$.
- 4) TPH analysis for an unknown (e.g., gasoline or diesel range not specified on the chain of custody) must always use a purge and trap method and report the results as TPH $C_6 - C_{10}$ (purgeable GRO) and TPH $C_{11} - C_{15}$ (purgeable DRO).
- 5) Method 5030A can be used as the purge method for 8021B or 8260B, and is considered acceptable by the Executive Secretary (UST).
- 6) The scale-down technique for aqueous samples may only be used for the determination of TPH as diesel range organics.
- 7) For diesel releases, the requirement for two different sample analyses will now be enforced. The determination of TPH (DRO) is a separate analyses from the determination of BTEXN. An extraction method and 8015B would be used for the TPH (DRO) analyses, and a purge and trap method used with 8021B or 8260B would determine the amount of BTEXN present in the sample.
- 8) For gasoline releases, a single sample analysis may be used if desired (with the appropriate detector(s) for the determinant method), since a purge and trap method is suitable for determination of both the TPH (GRO) and BTEXN/MTBE present in the sample. Either method 8260B or 8021B combined with 8015B can be used for the determination of these constituents. If 8021B combined with 8015B is used, then the single sample run would use appropriate detectors in series for the determination of BTEXN/MTBE and TPH (GRO) present in the sample.
- 9) For new or used oil analyses, method 1664 is preferred over the 5520B and 5520F methods. The 5520 methods will be deleted in the future due to concerns with the freon extraction solvent used.
- 10) Method 1664 is used for the determination of oil and grease using "N-Hexane Extractable Material (HEM)." The 1664 method can also be used for the determination of total recoverable petroleum hydrocarbons using "Silica Gel Treated N-Hexane Extractable Material (SGT-HEM)."

STANDARD REPORTING FORMAT FOR ORGANIC ANALYSIS REPORT:

Pursuant to the recent rule changes, approved laboratories must now report: the sample preparation method used; any modifications made to the certified method which have been approved by the Executive Secretary (UST) (e.g., dual column confirmation not performed, etc.); any peculiarities noted during analyses (e.g., sample not acid preserved, sample not chilled, matrix interference, etc.); and, the final dilution factor used. If the sample was not diluted, the report indicates that the dilution factor equals 1.0. The attached example shows the critical information that must now be reported by the laboratories, regardless of the reporting format used.

ORGANIC ANALYSIS REPORT

Client:
Date Sampled:
Lab Set ID:

Contact:
Date Received:
Received by:

Analysis Requested:
BTEXN/MTBE &
TPH as gasoline

Analysis Method:
EPA SW-846 #8021B
EPA SW-846 #8015B
Sample Prep: 5030A

Date Analyzed:

Lab Sample ID:

Field Sample ID:

Reporting Units:
ppm (mg/L)

Analytical Results

Volatile Hydrocarbons

<u>Compound:</u>	<u>Reporting Limit:</u>	<u>Amount Detected:</u>
Methyl tert-butyl ether	0.002	<0.002
Benzene	0.001	0.24 E
Toluene	0.002	0.013
Ethylbenzene	0.002	0.067
Total Xylenes	0.002	0.051
Naphthalene	0.004	0.013
Total Petroleum Hydrocarbons (C ₆ to C ₁₀)	0.02	0.91

Footnotes:

E Estimated value. The amount exceeds the linear working range of the instrument
DF Dilution Factor Used = 1.0
Dual column confirmation not performed

Approved by: _____ Date: _____
Laboratory Supervisor